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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,991	10/10/2001	Ping Wai Wan	78945-27 /jlo	4768

29382 7590 07/01/2004

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EXAMINER	
PAYNE, DAVID C	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/972,991	WAN ET AL.	
	Examiner	Art Unit	
	David C. Payne	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/11/02 & 1/24/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 8, 9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedersen et al., WO 99/33200 A (DSC COMMUNICATIONS AS (DK)) 1 July 1999 (hereinafter referred to as Pedersen) in view of Richard Lyons, "Understanding Digital Signal Processing" Addison-Wesley Publishing, 1997, pages 319-349 (hereinafter referred to as Lyons).

Re claims 1-3, 5, 8, Pedersen disclosed

A method of identifying and detecting channels in a multiplexed communications network, comprising the steps of: modulating each channel to be identified with a respective combination of at least two continuous dither tones (page 10, lines 4-11); and detecting the dither tones to detect said channels,

Pedersen does not disclose the step of detecting the dither tones comprising performing an FFT (Fast Fourier Transform) operation to detect dither tones of a channel having a relatively

high power and performing coherent averaging of FFT results over a plurality of FFT operations to detect dither tones of a channel having a relatively low power.
Lyons disclosed using a coherent averaging of FFT results (page 328 1st paragraph). It would have been obvious to one ordinary skill in the art at the time of invention to use coherent averaging of FFT of signals in the Pedersen invention to increase the accuracy of measuring relative signal powers as disclosed in the same passage of Pedersen above.

Re claims 4, Pedersen does not disclose wherein the step of modulating each channel to be identified with a respective combination of at least two continuous dither tones comprises modulating each channel with a respective one of at least three continuous dither tones with a cyclic repetition and a predetermined periodicity. It would have been obvious to one ordinary skill in the art at the time of invention to use more dither tones in order to increase the number of distinguishable patterns.

Re claims 9, 14 and 15 Pedersen does not disclose
the step of detecting intensity modulation of at least one optical signal, detecting dither tones of the optical signal using an FFT (Fast Fourier Transform) operation, and performing coherent averaging of FFT results over a plurality of FFT operations. Lyons disclosed using a coherent averaging of FFT results (page 328 1st paragraph). It would have been obvious to one ordinary skill in the art at the time of invention to use coherent averaging of FFT of signals in the Pedersen invention to increase the accuracy of measuring relative signal powers as disclosed in the same passage of Pedersen above.

4. Claims 6, 7, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedersen et al., WO 99/33200 A (DSC COMMUNICATIONS AS (DK)) 1 July 1999 (hereinafter referred to as Pedersen).

Re claims 6, 7 and 12 Pedersen disclosed

A method of identifying optical channels in an optical WDM network, comprising the steps of: continuously generating dither tones at a plurality of frequencies (page 10, lines 4-11, and page 16 lines 4-9); and intensity modulating (same passage AM modulation)

Pedersen does not disclose each of a plurality of optical channels to be identified with a respective selection of at least two of said dither tones in a cyclically repeated sequence and with a predetermined periodicity. It would have been obvious to one ordinary skill in the art at the time of invention to cyclically repeat the tones so that the entire length of the signal could be coded and hence identified that is coded in perpetuity.

Re claims 10, 11 and 13 Pedersen disclosed

A modulating arrangement comprising: a plurality of continuous dither tone sources; a selector for selecting at least two dither tones (page 10, lines 4-11, and page 16 lines 4-9)

Pedersen does not disclose said sources in a cyclically repeated sequence and with a predetermined periodicity; a modulator for modulating a channel of a multiplexed communications network with the cyclically repeated sequence of dither tones from the selector; and a feedback loop for maintaining a predetermined modulation depth of the

channel by the modulator. It would have been obvious to one ordinary skill in the art at the time of invention to cyclically repeat the tones so that the entire length of the signal could be coded and hence identified that is coded in perpetuity. Furthermore, it would have been obvious to one ordinary skill in the art at the time of invention to use feedback to maintain the modulation depth since feedback loops are well known control mechanism for maintaining parameters with a set of bounds.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (703) 306-0004. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

LESLIE PASCAL
PRIMARY EXAMINER